

ENHANCING AGRICULTURAL EDUCATION IN PRIMARY AND SECONDARY SCHOOLS

EXECUTIVE SUMMARY OF THE PROJECT

1. THE CONCEPT:

To add value and competitiveness of agricultural education in primary and secondary schools so as to enhance the contribution of agricultural information and communication to the improvement of livelihoods and sustainable agricultural production.

2. PROBLEM

Despite the agricultural technologies that have been generated through research in Africa, the impact of such technologies is yet to be felt in most households owing to inefficiency in communicating and sharing agricultural knowledge. The situation in Africa is aggravated by slow adoption of modern information and communication technologies and the shortage of information and communication management professionals. Besides the slow adoption of technologies, interest in agriculture among students at education institutions has been on the decline. Agriculture as a subject is devalued in primary and secondary schools. The situation is made worse since agriculture is given undesirable connotations e.g. agricultural activities are sometimes used as punishment. In some instances, agriculture is merged with other subjects, agricultural curriculum is poorly designed and most often students do not have access to learning aids that can enable them learn about new technologies in agriculture.

Although efforts are being made to revolutionise agriculture education in institutions of higher learning by introducing ICT, such efforts cannot stand alone. Students entering the institutions of higher learning need to have agricultural knowledge and skills acquired from primary and secondary schools, to be able to excel at the higher level of learning. In addition, young people play a significant role in agricultural production in SSA. There is therefore need to have ICT integrated in primary and secondary agriculture education curriculum so as to add value and sustain interest of students in the subject. In addition, building of agricultural information and technology centres coupled with agricultural education can contribute towards enhanced agricultural training in secondary and among small holder farmers.

3. THE RATIONALE

Development of an agricultural education programme that incorporates ICT at primary and secondary levels is important for sustainable agricultural development in SSA. First, children play an important role in agriculture, and there is an increase in child-headed households in SSA countries due to the HIV pandemic. Therefore, formal schooling should teach agricultural knowledge and skills based on practical tasks involving modern production technologies in primary and secondary schools so as to prepare the children for the agricultural tasks they perform. Incorporating ICT in agriculture education will enable students have access to information on modern technologies, apply the knowledge, hence contribute to increased agricultural productivity. Such education will also enhance the dissemination of information on agricultural technologies from children to parents.

Secondly, the rate of scientific and agricultural information dissemination among the farming communities especially small holder farmers is low. There is need to have agricultural research findings repackaged and disseminated to the farming communities so that they can have access to the information on how to improve agricultural productivity. Integrating ICT in agricultural education in primary schools coupled with creation of information centres will enable local communities have access to research findings and other scientific information that may boost their productivity.

Thirdly, few students in primary and secondary schools have access to ICT and adequate learning aids in SSA countries. Children of peasant farmers often attend public schools that have inadequate learning facilities and poor infrastructure. Providing learning ICT centres in public primary and secondary schools in rural areas will not only enhance the agricultural learning process, but will also sustain students' interest in the subject. Such information centres will also serve as learning centres for small holder farmers.

Fourthly, programmes focusing on agricultural information communication management training at primary and secondary levels do not exist, hence the need to incorporate ICT in agricultural education in the school curriculum. Lastly, given the plans to

introduce information communication management in agricultural institutions of higher learning in some SSA countries, it is important that students in primary and secondary schools are equipped with the knowledge and skills, so as to minimise the difficulties in grasping the concepts when they decide to pursue agriculture at university level.

4. EVIDENCE THAT THE PROJECT CAN BE SUCCESSFUL

The NEPAD E-schools programme in Kenya was launched in September 2005 and since 2006, six schools have benefited from the pilot project in the country. So far the NEPAD e-schools initiative in Kenya has provided substantial experience and impetus on equipping of schools including the need to determine low cost and sustainable technologies as well as the need to enhance capacity for integration of ICT to teaching and learning. The objective of the NEPAD E-Schools programme is to integrate ICT in education curriculum at secondary and primary schools in order to improve access, quality and equity in provision of education within the member states and in Africa (NEPAD Kenya, 2006). Information on whether agriculture is one of the subjects where ICT is being applied is not available. There is therefore need to verify this from the primary and secondary schools where the programme is being implemented and from the NEPAD Kenya Secretariat. Similar programmes of integrating ICT in teaching other subject areas have been successful in the UK and North America.

5. EXPECTED BENEFITS OF THE PROJECT

The benefits of the programme include: an increase in the number of students acquiring agricultural knowledge and skills; small holder farmers including female farmers will learn about how to use IT to access agricultural information, increase in agricultural productivity, enhanced teaching of agriculture at all levels of learning; increase in female ag professionals.

6. SUSTAINABILITY AND SCALE

The Agricultural Education programme will be integrated into the primary and secondary school education system through the Ministry of Education. The schools will be linked to universities offering Agriculture and Information Science. The Ministry of Education, Faculties of Agriculture and Information Science, and other research institutions as well as the Ministry of Agriculture, will work together to ensure that local and region specific research findings are repackaged and distributed to schools participating in the programme. The government should increase budgetary allocation for the education sector to take care of this. The project can be replicated in other schools within each country, but will require support from the government.

7. HOW THE PROJECT WILL TARGET THE NEEDS AND BE OF SPECIFIC BENEFIT TO WOMEN SMALL HOLDERS

Girls will benefit from the programme since it will be implemented in both girls and boys schools. The girls can share the agricultural information with others and translate the agricultural knowledge and skills into action, especially since they play a significant role in agricultural production. Female small holder farmers will be able to attend training sessions that will be conducted at the information centres. In addition, through the centres, they will be able to access information that will contribute to an increase in agricultural production, hence household food security. The programme is going to interest girls enabling them to pursue agriculture to higher levels of education. After completion of their studies the girls can take up jobs as agricultural extensionists, agricultural educationists, researchers and policy makers.

8. THE PROJECTED COST OF THE PROJECT

This will be a five year project in 10 African countries. In each country, two agricultural universities and twelve schools will be involved in the project. Schools participating in the project will be located in agricultural regions. The costs related to the project are as follows: Equipment - \$100 million, supplies - \$ 50million, curriculum development and training - \$25 million, travel - \$ 45 million, personnel - \$ 60 million, consultants - \$10 million, Maintenances - \$50 million, Total- \$ 340 million.

9. MEASURES OF SUCCESS

In year 1: staff engagement at the ministry of Education, universities and schools; agricultural curriculum with ICT integrated developed and disseminated to schools; increase in formation of agricultural clubs in schools; enhanced ICT content in agricultural education for primary and secondary schools;

Year 2: Increased agricultural activities in agricultural clubs; increase in SHF trained on use of information centres to access information; increase of number of students taking on agriculture as an optional subject;

Year 3: increased agricultural production for SHF, increased access to markets and inputs; increased application of technologies on crop production, livestock production; increase in the high school graduates with interest to pursue agricultural related courses; increased enrolment of both male and female students in agricultural tertiary education institutions. Year 4 and 5: increased number of women agricultural professionals, increased literacy rates among women; increased agricultural production, increase food security among SHF households.

10. RISKS

The amount of land available for agricultural activities in most SSA countries is diminishing due to population pressure. The agricultural knowledge and skills acquired through the agricultural education programme may not be translated into action especially among students who come from households that do not own/have no access to land.

Government involvement and ownership of the project by the local community would be important for the project sustainability. However, governments may have other priorities and hence be reluctant to allocate funds to sustain the project. The community on the other hand may not be willing to contribute towards the running of the project, unless they see its benefits.